

**REMARKS**

Claims 1-32, 37-42, 44 and 46-51 are pending. Claims 2, 10-14, 37-42 and 49-51 were withdrawn. In the Office Communication dated January 10, 2008, claims 1-32, 37-42, 44 and 46-51 were subject to restriction under 35 U.S.C. § 121, as follows:

I. Claims 1, 2-32 and 44, 47 and 48 drawn to cells and to an *in vivo* method of inducing totipotent or pluripotent stem cells which comprises providing isolated **RNA to a cell population in a patient** under conditions to induce differentiation of said stem cells.

II. Claims 1, 3-9, 15-18, 19-32, 44, 47, and 48 drawn to cells and to an *in vitro* method of inducing totipotent or pluripotent stem cells which comprises providing isolated RNA to a **cell culture of said stem cells** under conditions to induce differentiation of said stem cells.

III. Claims 37-41 and 49 drawn to cells and to an *in vitro* method of reversing the differentiation of differentiated cells to produce a desired totipotent or pluripotent stem cells comprising providing isolated RNA to a **cell culture of said differentiated cells** under conditions to induce differentiation of said differentiated cells into stem cells.

IV. Claims 42, 50 and 51 drawn to cells and to an *in vitro* method of producing differentiated cells which comprises: (i) providing isolated **RNA to a cell culture of differentiated cells** under conditions to induce differentiation of said differentiated cells into stem cells and (ii) providing isolated RNA to a **cell culture of said stem cells** under conditions to induce differentiation of said stem cells.

V. Claims 46 are drawn to a method of **screening for an RNA sequence** comprising extracting **RNA** from cells, separating the extracted RNA into fractions, providing a fraction to a test cell, and analyzing the test cell for an altered property.

Applicants elect Group II consisting of claims 1, 3-9, 15-18, 19-32, 44, 47, and 48 for prosecution at this time. This election is made with traverse and no representations are made by this election concerning the merits of the Restriction Requirement with respect to the possible existence of multiple distinct inventions among the originally presented claims. Applicants reserve the right to pursue the subject matter of all non-elected claims in one or more related applications.

Applicants traverse the restriction requirement and request reconsideration thereof for the following reasons.

Applicants respectfully traverse the restriction requirement because a search and examination of the subject matter recited in the pending claims of at least Groups I and II can be conducted without a serious burden as explained below.

The purpose of 35 U.S.C. § 121 is to avoid the necessity of conducting separate and diverse searches of claims directed to independent or distinct subject matter. Separate and diverse searches would not be required for at least the proposed rejoined groups as indicated above. The relationship among the claimed subject matter is such that a search of the subject matter encompassed by the claims of Group I would necessarily lead to disclosures, to the extent that any exist, of the subject matter encompassed by the claims of Group II.

Groups I and II outlined above should be rejoined because examination of all of the claims together in the suggested rejoinder would not impose a serious burden on the examiner. Applicants respectfully request reconsideration and withdrawal of the restriction requirement with respect to those groups as outlined above. It would appear that examining all of the claims of proposed rejoined Groups I and II above, would not be unduly burdensome.

Applicants also would like to bring the following to the examiner's attention: the European Patent Office (EPO) considered the inventions of Groups I and II to **have** "unity of invention" under PCT and EPO provisions. In view of the U. S. Patent and Trademark Office and Congress desire for patent harmonization, applicants encourage the examiner to reconsider the proposed restriction at least as applied to Groups I and II.

Therefore applicants would like to suggest that at least Groups I and II should be pursued in a single invention and rejoinder of these groups is requested. Nevertheless, in accordance with 37 CFR § 1.143, applicants hereby provisionally elect Group II for prosecution on the merits.

**Species Election**

For the inventions of Group II, the examiner requested that the applicants elect one of the following altered cell properties caused by administration of RNA to the stem cells (recited in claims 6-9):

- (1) differentiation of the stem cells to an adult specialized cell;
- (2) reversal of differentiation of an adult specialized cells to a stem cell;
- (3) differentiation of a specialized adult cell to an adult cell of a different specialty;

and

- (4) changed immunological profile

Applicants elect (1) above, differentiation of the stem cells to an adult specialized cell.

**Source of RNA**

The examiner requested that the applicants elect choose one of the following sources of RNA for use in the invention (as recited in claims 15-18):

- (1) cells of a different developmental stage than the developmental stage of the cells to be treated;
- (2) cells of a more active cell generative stage than that of the cells to be treated;
- (3) an individual who shows immunity or resistance to a disease or condition; and
- (4) fetal cells, neonatal cells, juvenile cells or embryonic cells

Applicants are prepared to elect source (3), an individual who shows immunity or resistance to a disease or condition. However, applicants do not believe this source of RNA is particularly relevant to the inventions of Group II above. Alternatively, applicants would prefer to elect the source or RNA recited in the description at page 16, lines 20-24 (i.e., cells comprising the desired differentiated cell type(s)). Applicants welcome a response from the examiner to this alternative source of RNA. If the examiner does not agree with applicants suggestion in view of the inventions of Group II, applicants elect source (3) as described by the examiner (i.e., an individual who shows immunity or resistance to a disease or condition).

**Selection of Stem Cell Type**

The examiner requested that the applicant elect one of the following types of stem cells for use in the invention (as recited in claims 23, 24, and 47):

- (1) adult animal stem cells (which includes bone marrow stromal cells, hematopoietic stem cells or neuronal stem cells and corresponding stem cell lines); and
- (2) embryonic stem cells and corresponding stem cell lines.

Applicants elect stem cell type (1) above (adult stem cells). It was unclear to applicants if a further election was required (to further elect one of the listed types of adult stem cells). If a further election is required, then applicants elect bone marrow stromal stem cells, in an abundance of caution.

**Conclusion**

Applicants believe that the foregoing constitutes a complete and full response to the Office Action of record. Accordingly, an early and favorable action is respectfully requested.

The examiner may call the undersigned at 206.332.1396 if a telephonic interview is required.

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/Andrew T. Serafini/  
Andrew T. Serafini  
Registration No. 41,303

Woodcock Washburn LLP  
Cira Centre  
2929 Arch Street, 12th Floor  
Philadelphia, PA 19104-2891  
Telephone: (215) 568-3100  
Facsimile: (215) 568-3439